

Appln. No. 09/820,339  
Amd. dated August 21, 2006  
Reply to Office Action of June 8, 2005

**Amendments to the Claims**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

Claims 1-7 (Cancelled).

8 (Currently amended). An isolated DNA molecule consisting of a sequence coding for a polypeptide tolerogen which suppresses the autoimmune response of an individual to acetylcholine receptor, wherein said polypeptide tolerogen is selected from the group consisting of:

(i) a polypeptide consisting of amino acid residues 1-121 of SEQ ID NO:2;

(ii) a polypeptide consisting of amino acid residues 122-210 of SEQ ID NO:2;

(iii) a polypeptide H $\alpha$ 1-205 consisting of amino acid residues 1-205 of SEQ ID NO:2; and

(iv) a polypeptide as defined in (i)-(iii), fused to an additional polypeptide at its N- and/or C-termini, wherein a human acetylcholine receptor  $\alpha$ -subunit portion, consisting of amino acid residues 1-121 of SEQ ID NO:2, amino acid residues 122-210 of SEQ ID NO:2, or amino acid residues 1-205 of SEQ ID NO:2 of said fused polypeptide does not assume the native

conformation of the  $\alpha$  subunit of the human acetylcholine receptor as determined from a binding assay to  $\alpha$ -bungarotoxin, where weaker binding to  $\alpha$ -bungarotoxin when compared to the corresponding portion from the acetylcholine receptor (AChR)  $\alpha$ -subunit extracellular domain indicates said fused polypeptide has not assumed the native conformation of the  $\alpha$ -subunit of AChR,

with the proviso that said polypeptide tolerogen does not consist of a sequence consisting of residues 1-210 of SEQ ID NO:2 or said sequence and one additional residue.

9(Previously presented). An isolated DNA molecule according to claim 8, which is selected from the group consisting of:

- (i) a DNA molecule consisting of the nucleotide sequence of nucleotides 1 to 363 of SEQ ID NO:1;
- (ii) a DNA molecule consisting of the nucleotide sequence of nucleotides 364 to 630 of SEQ ID NO:1;
- (iii) a DNA molecule consisting of nucleotides 1 to 615 of SEQ ID NO:1; and
- (iv) a DNA molecule which codes for a polypeptide encoded by the DNA sequence of (i), (ii) or (iii).

Claims 10 and 11 (Cancelled).

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12(Previously presented). An isolated DNA molecule consisting of the nucleotide sequence corresponding to nucleotides 1 to 363 of SEQ ID NO:1.

Claim 13 (Cancelled).

14(Previously presented). An isolated DNA molecule according to claim 9, which consists of the nucleotide sequence of nucleotides 364 to 630 of SEQ ID NO:1.

15(Previously presented). An isolated DNA molecule according to claim 36, wherein said additional polypeptide is glutathione S-transferase (GST) and is fused to the human acetylcholine receptor  $\alpha$  subunit portion at its N- and /or C-termini.

16(Previously presented). A replicable expression vector comprising a DNA molecule according to claim 8.

17(Previously presented). An isolated prokaryotic or isolated eukaryotic host cell transformed with the replicable expression vector of claim 16.

18(Previously presented). A process for preparing a polypeptide which suppresses the autoimmune response of an individual to acetylcholine receptor, comprising:

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(i) culturing a host cell of claim 17 under conditions promoting expression; and

(ii) isolating the expressed polypeptide.

Claims 19-24 (Cancelled)

25(Previously presented). An isolated DNA according to claim 8, wherein said polypeptide tolerogen consists of amino acid residues 1-121 of SEQ ID NO:2.

Claim 26 (Cancelled).

27(Previously presented). An isolated DNA according to claim 8, wherein said polypeptide tolerogen consists of amino acid residues 122-210 of SEQ ID NO:2.

Claims 28 and 29 (Cancelled).

30(Previously presented). An isolated DNA according to claim 8, wherein said polypeptide is said fusion polypeptide as defined in (iv).

31(Previously presented). An isolated DNA according to claim 30, wherein said additional polypeptide is glutathione S-transferase.

Claims 32-35 (Cancelled).

36(Currently amended). An isolated DNA molecule coding for a polypeptide tolerogen which suppresses the autoimmune response of an individual to acetylcholine receptor, wherein said polypeptide tolerogen is either (a) a polypeptide consisting of amino acid residues 1-121 of SEQ ID NO:2 fused to an additional polypeptide at its N- and/or C-termini, (b) a polypeptide consisting of amino acid residues 1-205 fused to an additional polypeptide at its N- and/or C-termini, or (c) a polypeptide H $\alpha$ 1-210 consisting of amino acid residues 1-210 of SEQ ID NO:2 fused to an additional polypeptide at its N- and/or C-termini, wherein a human acetylcholine receptor  $\alpha$ -subunit portion, consisting of amino acid residues 1-121 of SEQ ID NO:2, amino acid residues 1-205 of SEQ ID NO:2, or amino acid residues 1-210 of SEQ ID NO:2, of said fused polypeptide does not assume the native conformation of the  $\alpha$ -subunit of the human acetylcholine receptor as determined from a binding assay to  $\alpha$ -bungarotoxin, where weaker binding to  $\alpha$ -bungarotoxin when compared to the corresponding portion from the acetylcholine receptor (AChR)  $\alpha$ -subunit extracellular domain indicates said fused polypeptide has not assumed the native conformation of the  $\alpha$ -subunit of AChR, with the proviso that said polypeptide tolerogen does not consist of a sequence consisting of residues 1-210 of SEQ ID NO:2 or said sequence and one additional residue.

37(Previously presented). A replicable expression vector comprising a DNA molecule according to claim 36.

38(Previously presented). An isolated prokaryotic or isolated eukaryotic host cell transformed with the replicable expression vector of claim 37.

39(Previously presented). A process for preparing a polypeptide which suppresses the autoimmune response of an individual to acetylcholine receptor, comprising:

- (i) culturing a host cell of claim 38 under conditions promoting expression; and
- (ii) isolating the expressed polypeptide.

40(Previously presented). An isolated DNA according to claim 8, wherein said polypeptide tolerogen consists of amino acid residues 1-205 of SEQ ID NO:2.

41(Previously presented). An isolated DNA according to claim 9, which consists of the nucleotide sequence of nucleotides 1 to 615 of SEQ ID NO:1.